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(Reprinted from the *Canadian Naturalist*.)

ON THE
COLEOPTERA
OF THE
ISLAND OF MONTREAL.

By A. S. RITCHIE.

The list of Coleoptera appended to this paper, has involved considerable labour, mostly on account of the bulkiness of the nomenclature, a prevailing fault in this as in most other branches of Natural History. Calling the same species by many names leads to great confusion; some of these insects have as many as six or seven synonyms.

I am indebted to Dr. Leconte, and to Dr. Horn, of Philadelphia, for their very kind assistance in the preparation of this list. Leconte's classification of the beetles of North America is the most authentic known to me for the simple reason that all his species are named from some special characteristic, as, structure, habits, or food, and not on tradition. His classification has therefore been adopted. The few remarks I propose to make on the Coleoptera of Montreal may be set forth under the heads of Nomenclature, Classification, and general remarks on the several families.

NOMENCLATURE.—Insects are named from specific or generic characteristics of structure, or colour, from the particular food they live on, or from some other material characters—so that they may be readily identified. The confusion which often arises from so many names, may be illustrated by an example. Olivier finds an insect about the year 1789, and after describing it, calls it *Leptura Vittata*; Kirby finds the same species about 1828, and

he calls it *Leptura semivittata*; finally, Germar about 1834 has another *alias* for the same species, *Leptura Abbreviata*. These names are all very good in their way, the creature may be known by any one of them,—but why change the original? The name given by the person who first described the species, certainly has the preference, provided the insect can be identified by it, and should be the only one retained. Nor does the trouble end here; you may look over the drawers of fifty cabinets of insects without finding any two of them to agree, as to what is the correct name for a particular species.

It would be a great matter if something could be done towards having an uniform nomenclature for Canadian insects.

The list contains twenty-seven families, one hundred and thirty-three genera and two-hundred and seventeen species, collected on the Island of Montreal; all not collected here, are in the following list.

CLASSIFICATION.—Entomologists and systematists have insisted on one or two peculiar characters, which they consider to be of primary importance and value, as the basis of classification. Swammerdam contended, that in the early, or preparatory states of an insect was to be discovered the solution of its natural position. His system was called the "Metamorphotic." Linneus considered that in the structure of the wings, lay the basis of classification. His system was called the "Alary." Fabricius accepted neither of these views; and on the structure of the organs of the mouth created his system. His system was called the "Maxillary." Latreille, not knowing which to prefer, formed a fourth, combining the three, which he called the "Eclectic." The "Septenary system" is one which is followed by some to a great extent. According to this theory, "in every group of seven, whether the group be large or small, one of the seven is central, and the other six surround it and are each connected with it." All entomologists at the present day agree with these various systems to a certain extent as invaluable guides to classification. Leconte's classification comprises ten orders; this appears to be the most natural division. These orders are again divided into tribes, stirps, families, genera, and species.

The order Coleoptera (or beetles) contains, according to Latreille, not less than 25,000 species; the estimate was made about the year 1800, and included beetles from all parts of the world, as then

known and described in European cabinets. Since then, according to the best modern authorities, the number has been more than doubled, and is now set down at 90,000 species. When we imagine each of these species differing in appearance and to a great extent in habits, the question naturally arises, what is the use of so many beetles?

We may divide the whole order into two principal groups; the Carnivorous and the Herbivorous species, with certain modifications.

It would seem that a portion of almost every substance in the animal and in the vegetable kingdom is assigned as food for beetles.

Among the carnivorous species we have cannibals, which prey on their fellows; others enjoy a repast on the remains of some unfortunate field mouse, or small bird, that death has overtaken; some, as for instance the *Dermestes*, feed in our kitchens, on lard and bacon, and destroy preserved specimens of Natural History. The last trace of the carnivorous habits may be seen in the ravages of the little beetles which infest the leather binding of books.

The Herbivorous division comprises those species which feed on leaves, flowers, fruit, and vegetables. Members of the large family of the *Capricornes*, feed on the solid wood of our forest trees. The last trace of the herbivorous habit may be seen in certain *Scarabæidæ* which feed on the excrement of herbivorous animals.

I shall now briefly notice the several families represented in the list. The first in order are the *Cicindelidæ* (or tiger beetles) and very tigers they are, both in their larval and perfect states. They live by stratagem, and as they run and fly well, are more than a match for most insects of their size. They are found in sandy situations, especially when the sun shines.

The next family *Carabidæ*, is one of the largest in the order; beetles of this group are principally carnivorous, some, however, prefer vegetable diet. *Calosoma Calidum* (commonly known as the "copper spot") is a good example of this family; it feeds on caterpillars, which it hunts with great avidity. Beetles of the genus *Harpalus* and *Amara* feed on vegetables. The distribution of species is very wonderful; for instance along the stone wall at the quarries, under stones, individuals of the genus *Harpalus* prevail in great numbers. The genus *Brachinus* is rare near

Montreal; to this genus belongs those beetles called "Bombardiers." They have the faculty of emitting volatile discharges, having a very pungent odour, accompanied with a slight noise and with a bluish smoke. They are to be found plentifully at the Back River under stones and decaying trees; as many as six or seven specimens may be taken under one stone. Four or five discharges are the greatest number I have seen them emit; after this process the insect appears quite exhausted.

Examples of the genus *Chlaenius* are also very plentiful along the banks of the St. Lawrence; at the Victoria Bridge, I have secured twenty specimens under one stone, comprising three species. They have a very pungent odour which remains on the hands for some time after washing.

The next three families are aquatic, viz., the Dytiscidae (or diving beetles), the Gyrinidae (or whirligigs), and the Hydrophilidae. Their food is aquatic larvae and plants; some of the larger species attack even frogs, and small fish. The foot of the male Dytiscus has long been admired as a microscopic object. The Gyrinidae have two pairs of eyes, which is one pair more than their congeners possess; they are largely represented in the ponds and streams near the city.

The Silphidae (or carrion beetles) may be found feeding in the bodies of dead animals; they are flat bodied insects and are very useful in removing putrid carcasses.

The next family Staphylinidae (or rove beetles) contains a great variety of species; some are microscopic in their dimensions, and none exceed an inch or so in length. These beetles are omnivorous; some feed on decomposing animal and vegetable matter, some on fungi, and others on flowers. The small insects which annoy us by getting into our eyes belong to this family.

The Histeridae, or "mimic beetles," are the next in order, they are found in excrements, in carcasses, and under bark. They have the power of folding their legs close to the body on being disturbed, so as to counterfeit death.

Examples of the family *Cucujidae* are apparently rare on the Island of Montreal. They are usually found under bark, and some are of a bright scarlet colour. The two specimens I have of *Cucujus clavipes* were captured on the board walk in St. Urbain St.

The Dermestidae, or skin beetles, are a group of insects of small size, generally about three quarters of an inch long. They are very

destructive to furs, and to preserved specimens of natural history.

The *Eyrhridae*, or pill beetles, are of an oval shape, and are found in excrement, also under stones and bark. They possess the faculty of drawing up the legs close to the body as in Hispteridae, and they remain in this way perfectly quiet as if dead.

The *Lucanidae*, or stag beetles, come next. They are entirely vegetable feeders; the large species feed mostly on leaves, the smaller on leaves and sap. Some of our largest Canadian beetles belong to this family, as for instance, *Passalus cornutus*, *Lucanus duma*, and *Lucanus placidus*. Neither of these species are found on the Island of Montreal. They are plentiful in Ontario, flying about oak trees. The smaller species, *Platycerus quercus* and *P. depressus*, are found near the city.

Next come the *Scarabaeidae*, a very large group, which feed on almost every thing. Some authors divide this family into, 1st, the ground or true *Scarabs*, which feed on excrement, 2ndly, the chafers and rose beetles, which live on leaves, flowers and sap. The Hermit Beetle, *Osmoderma*, belongs to this group.

The two following families, *Buprestidae* and *Elateridae*, are well represented on the Island. Some of the exotic species are adorned with splendid metallic tints. The Brazilian Buprestidae are gorgeous insects, their wing cases or elytra being very hard. A great many are mounted and sold for breast pins and for other articles of jewellery. A little black insect, about three quarters of an inch long (*Melanophila Longipes*), belongs to this family. In the warm days of summer it runs about the side-walk, and flies at intervals, alighting generally on the neck, where it bites very keenly, the bite leaving a feeling as if the flesh was burnt with hot sealing wax. The large Elater, *Alaus oculatus*, has rarely been found here; one I picked up on the side-walk on St. Paul St.;—the other was captured on a tree on St. Helen's Island last summer, on the occasion of the field meeting of the Natural History Society.

The family *Lampyridae* includes the fire flies, a group well represented in the district in question. They occur in great numbers in the early summer, and feed on the mucus of the birch trees on the mountain.

Cleridae is the next family; it is composed of insects of small size, which are parasitic in their larval state on bees, and in bees and ants' nests. In their imago or perfect state they are found on flowers.

The family *Tenebrionidae* contains a number of species that live upon vegetable matter in various conditions. A very common insect, *Tenebrio Molitor*, called in its larval state the meal worm, belongs to this family.

Meloeidae: to this group belongs the *Cantharis Vesicatoria*, or Spanish fly. Examples of the genus *Meloe* are called oil beetles, on account of a yellow oily substance exuding from their joints on their being handled.

The different species of weevils or snout beetles, belong to the *Curculionidae*. They feed upon plants, fruits, nuts and seeds, and are peculiar for their having the wing-cases, in many instances, covered with beautiful scales. This family requires careful study, as but little is as yet known of the species belonging to this interesting section.

The *Longicornes* belong to the family *Cerambycidae*; this is a very extensive group. They are principally lignivorous, and in their larval and perfect states feed on solid and decayed wood.

Members of the genus *Leptura* are mostly floral species, feeding in their grub state on wood, and in their perfect state on flowers.

The leaf-eaters come next; they include the two families *Chrysomelidae* and *Cassididae*. These insects feed entirely on the leaves of plants, and are very destructive in gardens.

The last family we will mention is the *Coccinellidae* (or lady birds); they are carnivorous and are very useful in gardens, riding plants of the small green insects called *Aphidae* or plant lice.

I have cursorily glanced at some of the leading characters represented in the families contained in the list, as regards their habits and their food. In concluding these remarks, I would state that looking at the insect world from an economic point of view, they are worthy the attention of mankind. Insignificant though insects appear, the wondrous results they bring about, are well known; the number of hands they keep busy are exemplified by the productions of the silk worm. We are indebted to them for ink, dyes, and lac; to the bee for honey and wax. Who knows but that an insect may yet be found in Canada that will be the means of developing some sphere of industry? In medicine we have the blister beetle or *Spanish fly*; that our Canadian *Meloe* and *Epicauta* may secrete Cantharadine I have no doubt; as it is an ally of the blister beetle of commerce. The oily matter exuding from the joints of *Meloe* warms the tongue considerably on applying it to that member. Then look how nature

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apportions her work; how she uses her handmaids. Look at those dead trees that lie decaying in our forests, and see how the agency of these little creatures is called in. They bore into and channel their decaying trunks, and thus allow the action of the atmosphere to hasten their decay, animal matter of all kinds has also many busy little hands and mouths ready to act as scavengers in clearing it away. Lift that dead quadruped or bird that has lain in the sun for a day or two in our streets or fields, the little insects are our friends, for above it, below it, and within it, they are at work and it will soon be gone, thus preventing the spread of gases noxious to the health of man. Every creature has its use, and to know their use is man's province.

LIST OF COLEOPTERA TAKEN ON THE ISLAND OF MONTREAL.

By ALEX. S. RITCHIE.

The list comprises twenty-seven families, one hundred and thirty-three genera, and two hundred and seventeen species. Synonyms are also appended, taken from LeConte. I am indebted to Dr. LeConte, of Philadelphia, and through him to Dr. Horn, for his kindness in comparing species, and naming them, and otherwise assisting me in the compilation of this list.

CICINDELIDAE.

- CINCINDELA*, Linn.
patruella Dej.
 (=consuetudinea Dej.)
sexguttata Fabr.
 (=violacea Fabr.)
splendida Hentz.
 (=limbalis var. Lec.)
 (=marginalis var. Dej.)
purpurea Oliv.
 (=marginalis Fabr.)
 var. *auduboni* Lec.)
vulgaris Say.
 (=obliquata Dej.)
 tranquebarica Herbst.)

CARABIDAE.

- NEBRIA* Latr.
pallipes Say.

- CALOSOMA* Fabr.
calidum Fabr.
 (=var. *lepidum* Lec.)

- CYCHERUS* Fabr.
SPHAERODERUS Dej.
canadensis Chand.

- HARPALIDAE.**
BRACHINUS Weber.
fumans Fabr.
 (=liberator Dej.)
conformis Dej.
 (=patruellus Lec.)

- LEBIA* Latr.
fusca Dej.

CYMINIDIS Latr.

- pilosa* Say.
 (=pubescens Dej.)

PLATYNUS Bon.

- sinuatus* Lec.
 (=anchomenus sin. Dej.)
extensicollis Lec.
 (=feronia exten. Say.)
 anch. exten. Dej.
melanarius Lec.
 (=agonum melan. Dej.)
 agonum *maurum* Hald.)
frater Lec.
cupripennis Lec.
 (=feronia cupr. Say.)
 agonum cupr. Dej.)
subcordatus Lec.
luteolus Lec.
chalcus Lec.
 (=agonum chalcus Lec.)

PTEROSTICHUS Bon.

- POECILUS Bon.**
chalcites Lec.
 (=feronia chalcites Say.)
 =poec. sayi Brulle.
 =poec. chalcites Kirby.
 =poec. micans Chand.)
lucublandus Lec.
 (=feronia luc. Say.)
 =poec. luc. Kirby.)
 Omasus Zieg.
caudicatus Lec.
 (=feronia caudicatus Say.)
 =stereocerus caud. Lec.)
 Argator Meg.

patruellus Lec.

- (=feronia patruellus Dej.)
 Pterostichus Bon.
stygius Lec.
 (=feronia stygius Say.)
 =fer. bisignata Harris.
 =omasus rugicollis Hald.)

AMARA Bon.

- fallax* Lec.
 CELIA, Zimm.
obesa Say.
 (=percossa obesa Hald.)

DIPLOCHILA Brulle.

- laticollis* Lec.
 (=rembus laticollis Lec.)
 =r. assimilis Lec.)

ANOMOGLOSSUS Ch.

- emarginatus* Chand.
 (=chalcus emarg. Say.)

CHLAENIUS Bon.

- sericeus* Say.
 (=carabus sericeus Forster)
chlorophanus Dej.
tricolor Dej.

AGONODERUS Dej.

- pallipes* Dej.
 (=carabus pallipes Fabr.)

ANISODACTYLUS Dej.

- discoideus* Dej.
baltimorensis Dej.
 (=h. baltimorensis Say.)

BRADYCELLUS *Er.*
rupestris *Lec.*
 (= *trechis rupestris* *Say.*)
 (= *acup, elongatulus* *Dej.*)
 (= *trechus flavipes* *Kirby.*)

HARPALUS *Latr.*
viridicaeneus *Beauv.*
 (= *h. viridis* *Say.*)
 (= *h. asinitus* *Dej.*)
pennsylvanicus *Lec.*
 (= *o. pennsylvanicus* *Degeer*)
 (= *c. bicolor* *Fabr.*)
 (= *sharp, bicolor* *Say.*)
compar *Lec.*
herbivagus *Say.*
 (= *ophonus mutabilis* *Hald.*)
 (= *var. h. proximus* *Lec.*)

STENOLOPHUS *Dej.*
ochropeus *Dej.*
 (= *ironia ochropeus* *Say.*)
 (= *var. s. convexicollis* *Lec.*)

EMBIDIUM *Latr.*
nigrum *Say.*

PERYPHUS *Meg.*
striola *Lec.*
 (= *echthedromus stri.* *Lec.*)
lucidum *Lec.*
 (= *echthedromus luc.* *Lec.*)
 (= *var. o. substrictus* *Lec.*)
rupestre *Dej.*
 (= *carabus rupestre* *Latr.*)
 (= *beni, tetracolum* *Say.*)
 (= *var. ruficollis* *Kirby.*)

NOTAPHUS *Meg.*
patruale *Dej.*

LOPHA *Meg.*
quadrinaculatum *yll.*
 (= *cicindela quadri.* *Linn.*)
 (= *bemb. oppositum* *Say.*)
pedicellatum *Lec.*

DYTISCIDAE.
HALIPLUS *Latr.*
immaculicollis *Harris.*
 (= *h. americanus* *Aube.*)

CNEMIDOTUS *Ill.*
edentulus *Lec.*

HYDROPHORUS *Clairv.*
laeustris *Say.*
 (= *h. pulicaris* *Aube.*)
modestus *Aube.*
 (= *h. ruficeps* *Aube.*)

LACCOPHILUS *Leach.*
maculosus *Say.*
 (= *lyticus macu.* *Germ.*)
proximus *Say.*
 (= *lac. americanus* *Aube.*)

COLYMBETES *Clairv.*
gymnotoporus *Eich.*
seminiger *Lec.*
exaratus *Lec.*
binotatus *Harris.*
 (= *maculicollis* *Aube.*)

ACILIUS *Leach.*
paternus *Lec.*
 (= *lyticus frater.* *Harris.*)
 (= *ac. semisulcatus* *Aube.*)

DYTISCUS *Linn.*
anxius *Mann.*
fasciventris *Say.*
 (= *carolinus* *Aube.*)

harrisii *Kirby.*
verticalis *Say.*

GYRINIDAE.

GYRINUS *Linn.*

—not determined.
DINKETES *McLeay.*
 —not determined.

HYDROPHILIDAE.

HYDROPHILUS *Geoffr.*

TROPISTERNUS *Sol.*
glaber *Herbst.*

HYDROCHARIS *Latr.*
obtusatus *Lec.*
 (= *hydrophilus obtu.* *Say.*)

BERORUS *Leach.*
striatus *Say.*

CERCYON *Leach.*
flavipes, *Er.*

CRYPTOPLEURUM *Muls.*
vagans *Lec.*

SILPHIDAE.

NECROPHERUS *Fabr.*

orbicollis, *Say.*

(= *halili* *Kirby.*)

(= *var. libialis* *Lec.*)

velutinus *Fabr.*

(= *tommentosus* *Weber.*)

SILPHA *Linn.*

negrodes *Wilkin.*

surinamensis *Fabr.*

THANATOPHILUS *Leach.*

japonica *Herbst.*

(= *caudata* *Say.*)

(= *tuberculata* *Lec.*)

(= *granigera* *Chevr.*)

AARGINALIS *Fabr.*

(= *novae boracensis* *Forster.*)

inequalis *Fabr.*

NECROPHILA *Kirby.*

peltata *Lec.*

(= *scarabeus pelt.* *Catesby.*)

(= *silpha americana* *Linn.*)

(= *var. o. terminat.* *Kirby.*)

(= *var. o. affine* *Kirby.*)

(= *var. o. canadense* *Kirby.*)

STAPHYLINIDAE.

ALROCHARA *Grav.*

—undetermined.

COPROPORUS *Kraatz.*

ventriculus *Kraatz.*

(= *tachinus ventriculus* *Fr.*)

(= *var. t. punctulatus* *Mels.*)

TACHINUS *Grav.*

fumipennis *Er.*

(= *tachyporus fumip.* *Say.*)

(= *t. axillaris*, *Er.*)

TACHYPORUS *Grav.*

jocosus *Say.*

(= *arilius* *Er.*)

CONOSOMA *Kraatz.*

crassum *Lec.*

(= *lach. crassum* *Grav.*)

(= *conurus crassus* *Er.*)

QUEDUS *Stephens.*
molochinus *Er.*
 (= *staph. molochinus* *Grav.*)
 (= *s. laticollis* *Grav.*)

CREOPHILUS *Stephens.*
 (= *staph. villosus* *Grav.*)
villosus *Kirby.*

LEISTOTROPHUS *Perty.*
cingulatus *Kraatz.*
 (= *staph. cingulatus* *Grav.*)
 (= *s. chrysurus* *Kirby.*)
 (= *s. speciosus* *Mann.*)

STAPHYLINUS *Linn.*
cinnamopterus *Grav.*
badipes *Lec.*

PHILONTHUS *Curtis.*
debilis *Er.*
 (= *staph. debilis* *Grav.*)

LATHROBium *Grav.*
 —undetermined.
 —undetermined.

CRYPTOBium *Mann.*
bicolor *Er.*
 (= *lathrobium bic.* *Grav.*)

PAEDERUS *Grav.*
littorarius *Grav.*

OXYTELUS *Grav.*
sculptus *Mels.*
 (= *moerens* *Mels.*)

HISTERIDAE.

HISTER *Linn.*
foedatus *Lec.*

PLATYSOMA *Leach.*
lecontei *Mars.*
coarctatus *Lec.*

NITIDULIDAE.

NITIDULA *Fabr.*

bipustulata *Fabr.*

OMOSITA *Er.*

colon *Er.*

(= *silpha colon* *Linn.*)

(= *nitidula colon* *Fabr.*)

IPS *Fabr.*

fasciatus *Say.*

(= *nitidula fasciata* *Oliv.*)

sanguinolentus *Say.*

(= *nitidula sanguin.* *Oliv.*)

CUCUJIDAE.

CUCUJUS *Fabr.*

clavipes *Fabr.*

DERMESTIDAE.

DERMESTES *Linn.*

lardarius *Linn.*

ATTAGENUS *Latr.*

megatoma *Er.*

(= *dermestes megat.* *Fabr.*)

BYRRHIDAE.

CYTILUS *Er.*

varius *Er.*

(= *byrrhus varius* *Fabr.*)

(= *b. trivittatus* *Mels.*)

(= *var. b. alternatus*, *Say.*)

BYRRHUS *Linn.*

americanus *Lec.*

s. Stephens.
s. Er.
micochinus Grav.
ella Grav.)
s. Stephens.
ylus Grav.)
rb.
OPHUS Pertu.
Keate.
ingulatus Grav.
urus Kirby.
osus Mann.)
LINUS Linn.
urus Grav.
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THUS Curtis.
ebilis Grav.)
ORUM Grav.
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ORUM Mann.
um bic. Grav.)
US Grav.
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ERIDAE.
er, Linn.
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OMA Leach.
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ULIDAE.
ELA Fabr.
Fabr.
SITA Er.
olon Linn.
olon Fabr.)
Fabr.
ty.
fasciata Oliv.)
tatus Say.
sanguin. Oliv.)
UJIDAE.
SUS Fabr.
Er.
ESTIDAE.
etus Linn.
inn.
EXUS Latr.
Er.
es megat. Fabr.
UHIDAE.
LUS Er.
varius Fabr.
tatus Mels.
ternatus, Say.)
SUS Linn.
Leec.

LUCANIDAE.

PLATYCEPHUS Geoffr.
 queucus Sch.
 (=lucanus queucus Weber.
 =pl. scutellatus Say.
 depressus Lec.

SCARABAEIDAE.

ONITHOPHAGUS Latr.
 latebrosus Sturm.
 (=copris latebrosus Fabr.
 =scar. he. ate Panzer.)

APHODIUS Ill.

TEUCHESTER Muls.
 fossor Fab.
 (=carabaeus fossor Linn.)
 finetarius Ill.
 (=scar. finetarius Linn.
 =aph. nodifrons Roodall.)

EUPARIA Lep.

=undetermined.

GEO-TRUPES Latr.

semipacrus.

similis.

MELOLONTIIDAE.

HOPLIA Ill.
 trifasciata Say.
 (=pilina la Burm.
 =helvola Mels.
 =tristis Mels.)

DICHOLONYCHA Kirby.

elongatula, Fitch.
 (=melo. elongatula Schonh.
 =melo. hexagona Germ.
 =dich. elonga a Burm.)

SERICA McLeay.

CAMPTORHINA Kirby.
 vespertina Lec.
 (=melolontha vesp. Schonh.
 =omalopia vesp. Harris.
 =c. atricapilla Kirby.
 sericea Burm.)

LACHNOSTERNA Hope.

fusca Lec.
 (=melolontha fusca Fyoh.
 =mel. quercina Knoch.
 =mel. fery. us Gyll.
 =l. quercina Lec.)

LIGYRUS Burm.

relictus L. e.
 (=carabaeus relictus Say.
 =heteronychus rel. Burm.
 =bothynus el. Lec.)

XYLOXYCTES Hope.

satyrus Burm.
 (=geotrupes satyrus Fabr.
 =scarabaeus satyrus Ol.
 =s. nascitornis am. Beauv.)

OSMODERMA Lep.

eremicola Dej.
 (=cetonia eremicola Knoch.
 =trichius eremicola Say.)
 scabra Dej.
 (=gymnolus fow. Kirby.
 =gym. rugosus Kirby.)

TRICHIUS Fabr.

affinis Gory.
 (=as imilis Kirby.
 =histriga Newman.
 =var. viridians Kirby.)

BUPRESTIDAE.

DIERCERA Esch.

divariata Lec.
 (=bup. divariata Say.
 =hiera dubia Mels.
 =d. aurichalca Mels.
 =l. parum. clata Mels.)

tenebrosa Lec.

(=bup. tenebrosa Kirby.)

ANCYLOGHIRA Esch.

fasciata Dej.
 (=bup. fasciata Fabr.
 =bup. 6 maculata Herbst.
 consularis Dej.
 (=bup. consularis Gory.)

maculiventris Lec.

(=bup. maculiventris Say.
 =bup. scriptata Lap.
 rusticorum Lec.
 (=bup. rusticorum Kirby.)

MELANOPHILA Esch.

longipes Gory.
 (=bup. long pes Say.
 =patina appent. Lap.
 =mel. immaculata G. ry.)

CHRYSOETHRIS Esch.

dentipes Lec.
 (=bup. dent pes Germ.
 =b. charakteristica Harris.)

ELATERIDAE.

ADELUCERA Latr.

marginata Germ.
 (=ela. et marginata Fabr.)
 obtecta, Lec.
 (=elater obtectus Say.)

ALAUUS Esch.

oculatus Esch.
 (=elater oculatus Linn.)

ELATER Linn.

luteus Say.
 (=ampelus lugubris Germ.)
 vitiosus Lec.
 carbonicolor Mann.

DRATERIUS Esch.

dorsalis Lec.
 (=elater dorsalis Say.
 =monocrepid. us dor. Lec.
 =aeolus dorsalis Cand.)

DOLOPUS Esch.

pauper Lec.

MELANOTUS Esch.

fixillus L.
 (=catonychus latifollis Er.
 =cr. schraepelii Mels.
 =cr. spheroidalis Mels.)

ATHOUS Esch.

ocuellatus Cand.
 (=el. ocuellatus Say.
 =ath. hypoleucus Mels.
 =ath. proreicollis Mels.
 =ath. strigatus Mels.)

CORYMBITES Latr.

aeripennis Lec.
 (=el. aeripennis Kirby.
 =el. apyromentus Rand.)

cylindriciformis Germ.

(=el. cylindriciformis Herbst.
 =el. appressifrons Say.
 =el. brevicornis Say.
 =cor. parallelus Germ.)

vernalis Germ.

(=Elater vernalis Hentz.)

tarsalis Lec.

(=athous tarsa is Mels.)
 spinosus Lec.
 sagitticollis Lec.
 (=pristiphorus sag. Esch.)

ASAPHES Kirby.

baridius Lec.
 (=elater baridius Say.
 =hemic. thomasi Germ.)

LAMPYRIDAE.

PHOTINUS Lap.

ELLYCHNIA Lec.

CORTUSCUS Lec.
 (=lampyrus cortusca Linn.
 =el. atipenn. s Molsch.)

TELEPHORIDAE.

CHAULIOGNATHUS Hentz.

pennsylvanicus Lec.
 (=telephorus penn. DeGeer
 =canth. rier Forster.
 =canth. bimaculata Fabr.
 =cha. bimaculatus Hentz.)

P. DABRUS Westw.

BR. CHYNOTUS Kirby.
 rugosulus Lec.

TELEPHORUS Schaffer.

curtisi Kirby.

RHAGONYCHA Esch.

carolinus Lec.
 (=cantharis carolinus Fab.
 =rha. carolinus Molsch.)

CLERIDAE.

TRICHODES Herbst.

nuttalli Klug.
 (=clerus nuttalli Kirby.)

CLERUS Geoffr.

THANAXIMUS Spin.

nubilus Klug.

TENEBRIONIDAE.

BLAPSTINUS Waterh.

metallicus, Lec.
 (=blaps. metallicus Fabr.
 =opatum interrupt. Say.
 =b. aeneolus Mels.
 =b. interruptus Lec.
 =b. hirkus Mels.)

HAPLANDRUS Lec.

femoratus Lec.
 (=trogonita femo at. Fabr.
 =tenebrio femorat. Beauv.
 =ups fulvipes Herbst.)

UPIS Fabr.

ceramboides Fabr.
 (=ten. ceramboides Linn.
 =u. reticulata Say.)

NYCTOBATES Lec.

pennsylvanicus Lec.
 (=ten. pennsylv. DeGeer.
 =ups chrysops Herbst.
 =ten. sublaevis Beauv.)

IPHTHMUS Truqui.

opacus Lec.

TENEBRIO Linn.

molitor Linn.

BOLETOTHERUS *Cand.*
cornutus Candée.
 (=oleotophagus *cor. Fabr.*
 =opatum *cor. Panzer.*)

DIAPERIS *Geoff.*
hydri Fabr.
 (=maculata *Oliv.*)

MELANDRYIDAE.
MELANDRYA *Fabr.*
striata Say.
 (=var. excavata *Hald.*)

MELOIDAE.
MELOE *Linn.*
rugipennis Lec.
augusticollis Say.

MACROBASIS *Lec.*
fabricii Lec.

OEDEMERIDAE.
NACERDES *Schmidt.*
melanura Schmidt.
 (=cantharis *melanura Linn.*
 =lecythialis *notata Fabr.*
 =ocet. *anala Oliv.*
 =ocet. *apicalis Say.*)

CERAMBYCIDAE.
CRIOCEPHALUS *Muls.*
agrestis Kirby.

ARHOPALUS.
speciosus Say.
pictus Drury.

CALLIDIUM *Fabr.*
janthinum Lec.

CLYTUS *Fabr.*
undulatus Say.
ruricola Oliv.
campestris Oliv.
erythrocephalus Fabr.
muricatus Kirby.

ENDERGES.
picipes Fabr.

GRAPHISURUS.
pusillus Kirby.
fasciatus DeGeer.

MONOHAMMUS, *Latr.*
scutellatus Say.
confusus Kirby.

SAPERDA, *Fabr.*
calcarata Say.
lateralis Hald.
vestita Say.

DESMOCERUS *Serv.*
palliatu Forester.

ACMEOPS *Lec.*
proteus Kirby.

TYPOCERUS.
sinuatus Newman.

LEPTURA *Linn.*
canadensis Fabr.

TRIGONARTHIS.
proxima Say.

CHRYSOMELIDAE.
DONACIA *Fabr.*
subtilis Kunze.

LEMA.
trilineata Oliv.

CHELYMORPHA.
cribraria Fabr.

CASSIDA *Herbst.*
bicolor Fabr.
guttata Fabr.

DIABROTICA *Chev.*
vittata Fabr.

OEDIONYCHIS *Latr.*
thoracica Fabr.

DORYPHORA.
trimaculata Say.

CHRYSOMELA *Linn.*
scalaris Lec.
labyrinthica Lec.
bisbyana Kirby.
trivittata Say.
polygoni Linn.

PABIA.
4 notata Say.

CHRYSOCHUS.
auratus Fabr.

CRYPTOCERPHALUS, *Geoff.*
mucoreus Lec.

COCCINELLIDAE.
HIPPODAMIA.

13 punctata Linn.
parenthesis Say.

COCINELLA *Linn.*
9 notata Herbst.
lecontei (var.)
bipunctata Linn.

MYSLA *Muls.*
15 punctata Oliv.

CHILOCORUS *Leach.*
bivulnerus Mels.

PSYLLOBORA.
20 maculata Say.

BRACHYCANTHA.
ursina Fabr.

EROTYLIDAE.
ENGIS.
4 maculata Say.

The following Canadian species were taken outside the Island of Montreal:—

CARABIDAE.
CALOSOMA *Fabr.*
frigidum Lec.
 From Dr. Horn. Oc. in Ont.

CARABUS, *Linn.*
vinetus Weber.
 Lake Superior.
 [=interruptus, Say.]
taedatus Fabr.
 Lake Superior.

IRICHOEA *Newman.*
viduus Dej.
 West Farnham, Quebec.

MYAS *Dej.*
coracinus Brulle.
 Araprior, Ont.
 [=fronta *coracinus Say.*
 =m. *cyanescens Dej.*

HARPALUS, *Latr.*
erraticus Say.
 Brantford, Ont.

TROGOSITIDAE.
NOSODES *Lec.*
silphides Lec.
 [=boletoth. *Sil. Newman.*
 Araprior, Ont.

LUCANIDAE.
LUCANUS *Linn.*
dama Thunb.
 Brantford, Ont.
 [=capreolus *Linn.*
 placidus *Say.*
 Brantford, Ont.
 [=lentus *Lap.*

PASSALUS *Fabr.*
cornutus Fabr.
 Ontario.
 [=distinctus *Weber.*

SCARABAEIDAE.
COPEIS *Geoffr.*
anaglypticus Say.
 Brantford, Ont.

BOLBOCERAS *Kirby.*
lazarus Lap.
 Ontario.
 [=scarabaeus *lazarus Fabr.*
 =geotrupes *melib. Fabr.*

MELOLONTIIDAE.
PELIDNOTA *McLeay.*
punctata McLeay.
 Brantford, Ont.
 [=scarabaeus *punct. Linn.*
 =var. *mel. lutea Oliv.*

COTALPA *Burm.*
lanigera Burm.
 Brantford, Ont.
 [=scarabaeus *lanig. Linn.*
 =melolonthus *lanig. Fabr.*

ONYCHIS Latr.
a Fabr.

ORYPHORA.
ata Say.

SOMELA Linn.
Lec.
ica Lec.
a Kirby.
a Say.
Linn.

PARIA.
Say.

RYSOCHUS.
Fabr.

ERPHALUS, Geoff.
s Lec.

INELLIDAE.
PPODAMIA.
ta Linn.
sis Say.

INELLA Linn.
Herbst.
var.
a Linn.

PSIA Muls.
ta Oliv.

CORUS Leach.
s Mels.

YLOBORA.
ta Say.

HYCANTHA.
abr.

TYLIDAE.
ENGIS.
a Say.

de the Island

ABAEIDAE.

is Geoffr.
eus Say.
Brantford, Ont.

CERAS Kirby.
p. Ontario.
aeus lazarus Fabr.
pes melio. Fabr.]

ONTHIDAE.

OTA McLeay.
McLeay.
Brantford, Ont.
neus punct. Linn.
el. lutea Oliv.]

LPA Burm.
Burm.
Brantford, Ont.
neus laug. Linn.
tha laug. Fabr.]

EURYOMIA Burm.

EURHIPIS Burm.
inda Lac. Brantford, Ont.
[=scarabaeus indus Linn.
=cetonia inda Oliv.
=trichius indus Fabr.
=cet. marylandica Frohl.
=cet. barbata Say.
=cet. brunea Gory.]

BUPRESTIDAE.

CHALCOPHORA Sol.
virginiensis Lec. Arnprior, Ont.
[=bupestris virgin. Drury.
=bup. virginica Say.
=bup. mariana Linn.
=ch. novaeborac. Fitch.]

liberta Fitch. Arnprior, Ont.
[=bup. liberta Germ.
=bup. borealis Lap.]

ELATERIDAE.

CORYMBITES Latr.
resplendens Esch. Reutrow, Ont.
zendalli Germ. Toronto, Ont.
(=ctenicerus Kend. Kirby.)
=el. anchorago Randall.)
Pulcher Lec. Toronto, Ont.

CUPESIDAE.

CUPES Fabr.
capitata Fabr. Toronto, Ont.

CERAMBYCIDAE.

ORTHOSOMA.
enicolor Drury. Ontario.

ELAPHIDION.
atomarium DeGeer. Toronto Ont.

villaeum Fab.
vicinum Hald.
Hudson's Bay Territory.

ARHOPALUS.
fulminans Fab. Ontario.

PHYSCONEMUM.
proteus Kirby. Ontario.

TETRAOPES.
5 maculatus Hald. Ontario.

tetraphthalmus Forster.
From Dr. Horn.

GOES.
pulcher Hald. Ontario.

ARGALEUS, Lec.
nitens Lec. Lake Superior.

The following species of British Lepidoptera I shall be happy to exchange for Canadian Coleoptera, other than are mentioned in the list.

A. S. R.

3 specimens Pieris Napi.
5 " Satyrus Janira.
3 " Erebia Blandini.
7 " Argyronis Euphrosyne.
7 " Melitea Artemis.
7 " Thecla Rubi.
3 " Chrysophanes Phleas.
4 " Polyommatus Albus.
4 " Argioleus.
3 " Smerinthus populi.
3 " Notodonta Dripedarius.
4 " Clostea Reclusa.
4 " Pygaera Bucephala.
5 " Palypiteryx Lacertula.
5 " Hydracelia Nictans.
3 " Micacia.
4 " Euthemonia Russula.
4 " Eucheia Jacobaeii.

8 specimens Xylophosia Polyodon.
4 " Triphaena Pronuba.
5 " Taeniocampa Gothica.
5 " Rubricosa.
4 " Plogophora Metuclosa.
4 " Hadena Adusta.
4 " pisi.
4 " Brassicae.
5 " Calocampa Vetusta.
5 " Exoleia.
3 " Philoptra Tragopogonus.
3 " Cucullia Umbraticae.
4 " Plusia Inscripta.
3 " Gnuma.
3 " Metrocampa Margaritata.
19 " Fidonla Atomaria.
3 " Coremia Fluctuaria.
3 " Munitaria.
8 " Harpalycce Russaria.

